Technical Note No. 7
Management - Coastal Plain

Asheville, N. C.
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APPALACHIAN FOREST EXPERIMENT STATION

Storage of loblolly pine seed.

(The emergency conservation program calls for much planting stock next year, most of which will have to be grown from seed collected this fall. Accordingly, large quantities of loblolly pine seed will be gathered and stored over winter. Inasmuch as the method of storage has a material effect upon the rate and amount of germination after the seed is planted, these preliminary results of experiments are presented with the hope that they will be of value in the storing of this seed.)

Experiments have been made to determine the rate and amount of germination of loblolly pine seed stored in various ways over the winter - in different media, at different temperatures, and with different amounts of water in the storage media. The media studied have included sand, peat, litter, water, and air. Five different moisture contents ranging from oven-dry to saturation have been studied for all of the media except air. In addition, seeds were stored at room temperature, at temperatures ranging from 40 to 60°F., and in a commercial ice house, where the temperatures ranged from 33 to 38°F. While all results of these experiments have not yet been compiled, it appears safe to recommend the stratification of loblolly pine seed in moist sand or moist peat at a temperature just above freezing.

In all of the tests made, storage under such conditions for two or three months, or longer, resulted in the most complete as well as in the fastest germination. One series of experiments showed that seeds stored for three months in saturated sand in a commercial ice house started germination in nine days after planting and completed it in ten more. This was three times as good as any dry storage method, either at low temperatures or at room temperatures. The germination percent averaged 96% compared to 70% for dry stored seed. Stratification in peat saturated with water gave almost as good results.

It is therefore recommended that, where complete germination within a short time after planting is desired, loblolly pine seed be stratified in moist sand and kept in cold storage. This can be done efficiently by using boxes 3-feet long, 3-feet wide, and 2-feet deep, covering the bottom with sand, and placing long, flat wire bags of loblolly pine seed between layers of sand. It will probably be most effective to put about 4 wire bags containing 3 to 4 pounds of loblolly pine seed each in every stratification box. These should be watered thoroughly soon after being placed in the cold storage room, and they should be rewatered at the end of each month during storage. Care should be taken that excess water does not collect in the bottoms of the stratification boxes, since results of storage in water have been poor.